



## **ENVIRONMENTAL PROTECTION AGENCY**

### **40 CFR Part 52**

**[EPA-R03-OAR-2017-0615; FRL-9607-01-R3]**

### **Air Plan Partial Approval and Partial Disapproval; Pennsylvania; Attainment Plan for the Indiana, Pennsylvania Nonattainment Area for the 2010 Sulfur Dioxide Primary National Ambient Air Quality Standard**

**AGENCY:** Environmental Protection Agency (EPA).

**ACTION:** Proposed rule.

**SUMMARY:** The Environmental Protection Agency (EPA) is proposing to revise its prior action that fully approved a state implementation plan (SIP) revision submitted by the Commonwealth of Pennsylvania, through the Pennsylvania Department of Environmental Protection (PADEP), to EPA on October 11, 2017, and supplemented on February 5, 2020. The SIP revision provided a plan for attainment of the 2010 sulfur dioxide (SO<sub>2</sub>) primary national ambient air quality standard (NAAQS) in the Indiana, Pennsylvania SO<sub>2</sub> nonattainment area (hereafter referred to as the “Indiana, PA NAA” or “Indiana Area”). The attainment plan submission included a base year emissions inventory, an analysis of the reasonably available control technology (RACT) and reasonably available control measure (RACM) requirements, enforceable emission limitations and control measures, a reasonable further progress (RFP) plan, a modeling demonstration of SO<sub>2</sub> attainment, and contingency measures for the Indiana Area. EPA is proposing to revise its prior action to partially approve and partially disapprove the SIP. This action is being taken under the Clean Air Act (CAA).

**DATES:** Written comments must be received on or before **[INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

**ADDRESSES:** Submit your comments, identified by Docket ID No. EPA-R03-OAR-2017-0615 at <https://www.regulations.gov>, or via email to [gordon.mike@epa.gov](mailto:gordon.mike@epa.gov). For comments

submitted at Regulations.gov, follow the online instructions for submitting comments. Once submitted, comments cannot be edited or removed from Regulations.gov. For either manner of submission, EPA may publish any comment received to its public docket. Do not submit electronically any information you consider to be confidential business information (CBI) or other information whose disclosure is restricted by statute. Multimedia submissions (audio, video, etc.) must be accompanied by a written comment. The written comment is considered the official comment and should include discussion of all points you wish to make. EPA will generally not consider comments or comment contents located outside of the primary submission (i.e. on the web, cloud, or other file sharing system). For additional submission methods, please contact the person identified in the **FOR FURTHER INFORMATION CONTACT** section. For the full EPA public comment policy, information about CBI or multimedia submissions, and general guidance on making effective comments, please visit <https://www.epa.gov/dockets/commenting-epa-dockets>.

**FOR FURTHER INFORMATION CONTACT:** Megan Goold, Planning & Implementation Branch (3AD30), Air & Radiation Division, U.S. Environmental Protection Agency, Region III, 1650 Arch Street, Philadelphia, Pennsylvania 19103. The telephone number is (215) 814-2027. Ms. Goold can also be reached via electronic mail at [goold.megan@epa.gov](mailto:goold.megan@epa.gov).

**SUPPLEMENTARY INFORMATION:** On October 11, 2017 and February 5, 2020, PADEP submitted a revision to its SIP for the purpose of providing for attainment of the 2010 SO<sub>2</sub> primary NAAQS in the Indiana, PA NAA.

## **I. Background**

On June 2, 2010, the EPA Administrator signed a final rule establishing a new primary SO<sub>2</sub> NAAQS as a 1-hour standard of 75 parts per billion (ppb), based on a 3-year average of the annual 99th percentile of daily maximum 1-hour average concentrations. See 75 FR 35520 (June 22, 2010), codified at 40 CFR 50.17. This action also provided for revoking the 1971 primary,

annual and 24-hour standards, subject to certain conditions.<sup>1</sup> EPA established the NAAQS based on significant evidence and numerous health studies demonstrating that serious health effects are associated with short-term exposures to SO<sub>2</sub> emissions ranging from five minutes to 24 hours, with an array of adverse respiratory effects including narrowing of the airways which can cause difficulty breathing (bronchoconstriction) and increased asthma symptoms. For more information regarding the health impacts of SO<sub>2</sub>, please refer to the June 22, 2010, final rule. See 75 FR 35520. Following promulgation of a new or revised NAAQS, EPA is required by the CAA to designate areas throughout the United States as attaining or not attaining the NAAQS; this designation process is described in section 107(d)(1)-(2) of the CAA. On August 5, 2013, EPA promulgated initial air quality designations for 29 areas for the 2010 SO<sub>2</sub> NAAQS (78 FR 47191), which became effective on October 4, 2013, based on violating air quality monitoring data for calendar years 2009–2011, where there was sufficient monitored data to support a nonattainment designation.

Effective on October 4, 2013, the Indiana Area (which encompasses Indiana County, and Plumcreek Township, South Bend Township and Eldertown Borough of Armstrong County) was designated as nonattainment for the 2010 SO<sub>2</sub> NAAQS for an area that encompasses the primary SO<sub>2</sub> emitting sources: the Keystone, Conemaugh, Homer City, and Seward Electric Generating Units (EGUs). The October 4, 2013, final designation triggered a requirement for Pennsylvania to submit by April 4, 2015, a SIP revision with an attainment plan for how the Indiana Area would attain the 2010 SO<sub>2</sub> NAAQS as expeditiously as practicable, but no later than October 4, 2018, in accordance with CAA sections 110(a), 172(c) and 191-192.

For a number of areas, including the Indiana Area, EPA published a document on March 18, 2016, effective April 18, 2016, that Pennsylvania and other pertinent states had failed to

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<sup>1</sup> EPA's June 22, 2010 final action revoked the two 1971 primary 24-hour standard of 140 ppb and the annual standard of 30 ppb because they were determined not to add additional public health protection given a 1-hour standard at 75 ppb. See 75 FR 35520. However, the secondary 3-hour SO<sub>2</sub> standard was retained. The 24-hour and annual standards became revoked for certain of those areas 1 year after the effective date of when the EPA designated them for the 2010 1-hour SO<sub>2</sub> NAAQS. See 40 CFR 50.4(e).

submit the required SO<sub>2</sub> attainment plan by this submittal deadline. See 81 FR 14736. This finding initiated a deadline under CAA section 179(a) for the potential imposition of new source review and highway funding sanctions. However, pursuant to Pennsylvania's submittal of October 11, 2017, and EPA's subsequent completeness letter to Pennsylvania dated October 13, 2017, finding the submittal complete and noting the stopping of the sanctions' deadline, these sanctions under section 179(a) will not be imposed. Additionally, under CAA section 110(c), the March 18, 2016, finding triggered a requirement that EPA promulgate a Federal implementation plan (FIP) within two years of the effective date of the finding unless, by that time, the state has made the necessary complete submittal and EPA has approved the submittal as meeting applicable requirements. EPA took final action approving this attainment plan on October 19, 2020 (85 FR 66240), which removed the FIP obligation.

On December 18, 2020, the Sierra Club, Clean Air Council, and PennFuture filed a petition for judicial review with the U.S. Court of Appeals for the Third Circuit, challenging that final approval.<sup>2</sup> On April 5, 2021, EPA filed a motion for voluntary remand without vacatur of its approval of the Indiana, PA SO<sub>2</sub> attainment plan. In its motion, EPA explained that as part of its plan Pennsylvania relied on a particular type of computer modeling (i.e., mathematical programs that project the impact of certain emissions limits on air quality). EPA had not previously approved use of this type of modeling in the context of SO<sub>2</sub> attainment for the purpose of demonstrating that certain source emission limits with averaging times greater than one hour included in the plan would demonstrate attainment with the 2010 SO<sub>2</sub> NAAQS. EPA further explained that a remand will allow EPA to revisit whether the specific modeling that Pennsylvania used to demonstrate that longer-term emission limits showed attainment was appropriate and will also allow EPA to further assess whether additional analyses are necessary to find that Pennsylvania has complied with the requirements of the CAA. Lastly, EPA explained that a remand will allow EPA to seek public comment on any new analyses and take

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<sup>2</sup> *Sierra Club, et. al. v. EPA*, Case No. 20-3568 (3<sup>rd</sup> Cir.).

other actions as appropriate.

In a short order without any commentary, on August 17, 2021, the U.S. Court of Appeals for the Third Circuit granted EPA's request for remand without vacatur of the final approval of Pennsylvania's SO<sub>2</sub> attainment plan for the Indiana, PA NAA, and required that EPA take final action in response to the remand no later than one year from the date of the court's order (i.e., by August 17, 2022). This action proposes EPA's response to the court's order.

After reconsideration, for reasons described in the following sections, EPA is proposing that it was incorrect to fully approve the Indiana, PA SO<sub>2</sub> attainment plan, and is proposing to revise its action to disapprove portions of the Indiana, PA SO<sub>2</sub> attainment plan while leaving certain other portions approved and while retaining incorporated emissions limits and control measures in the plan for limited SIP strengthening purposes. If EPA finalizes the partial disapproval proposed here, that action would initiate a sanctions clock under section 179, providing for emission offset sanctions for new sources if EPA has not fully approved a revised plan within 18 months after final partial disapproval, and providing for highway funding sanctions if EPA has not fully approved a revised plan within 6 months thereafter. The sanctions clock can be stopped only if the conditions of EPA's regulations at 40 CFR 52.31 are met. A final partial disapproval would also initiate an obligation for EPA to promulgate a FIP within 24 months unless Pennsylvania has submitted, and EPA has fully approved, a plan addressing these attainment planning requirements.

Attainment plans for SO<sub>2</sub> must meet the applicable requirements of the CAA, and specifically CAA sections 110, 172, 191, and 192. The required components of an SO<sub>2</sub> attainment plan submittal are listed in section 172(c) of Title 1, part D of the CAA. EPA's regulations governing SO<sub>2</sub> nonattainment SIPs are set forth at 40 CFR part 51, with specific procedural requirements and control strategy requirements residing at subparts F and G, respectively. Soon after Congress enacted the 1990 Amendments to the CAA, EPA issued comprehensive guidance on SIPs, in a document entitled the "General Preamble for the

Implementation of Title I of the Clean Air Act Amendments of 1990,” published at 57 FR 13498 (April 16, 1992) (General Preamble). Among other things, the General Preamble addressed SO<sub>2</sub> SIPs and fundamental principles for SIP control strategies. *Id.* at 13545-49, 13567-68.

On April 23, 2014, EPA issued guidance (hereafter “2014 SO<sub>2</sub> Nonattainment Guidance”) for how state submissions could address the statutory requirements for SO<sub>2</sub> attainment plans.<sup>3</sup> In this guidance, EPA described the statutory requirements for an attainment plan, which include: (1) an accurate base year emissions inventory of current emissions for all sources of SO<sub>2</sub> within the nonattainment area (172(c)(3)); (2) an attainment demonstration that includes a modeling analysis showing that the enforceable emissions limitations and other control measures taken by the state will provide for expeditious attainment of the NAAQS (172(c) and (c)(6)); (3) demonstration of RFP (172(c)(2)); (4) implementation of RACM, including RACT (172(c)(1)); new source review (NSR) requirements (172(c)(5)); and (5) adequate contingency measures for the affected area (172(c)(9)). A synopsis of these requirements is provided in the notice of proposed rulemaking on the Illinois SO<sub>2</sub> nonattainment plans, published on October 5, 2017, at 82 FR 46434.

In order for the EPA to fully approve a SIP as meeting the requirements of CAA sections 110, 172 and 191-192 and EPA’s regulations at 40 CFR part 51, the SIP for the affected area must demonstrate to EPA’s satisfaction that each of the aforementioned requirements have been met. Under CAA sections 110(l) and 193, EPA may not approve a SIP that would interfere with any applicable requirement concerning NAAQS attainment and RFP, or any other applicable requirement, and no requirement in effect (or required to be adopted by an order, settlement, agreement, or plan in effect before November 15, 1990) in any area which is a nonattainment area for any air pollutant, may be modified in any manner unless it ensures equivalent or greater emission reductions of such air pollutant.

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<sup>3</sup> See “Guidance for 1-Hour SO<sub>2</sub> Nonattainment Area SIP Submissions” (April 23, 2014), available at [https://www.epa.gov/sites/production/files/2016-06/documents/20140423guidance\\_nonattainment\\_sip.pdf](https://www.epa.gov/sites/production/files/2016-06/documents/20140423guidance_nonattainment_sip.pdf).

CAA section 172(c)(1) directs states with areas designated as nonattainment to demonstrate that the submitted plan provides for attainment of the NAAQS. The provisions in 40 CFR part 51, subpart G, further delineate the control strategy requirements that SIPs must meet, and EPA has long required that all SIPs and control strategies reflect four fundamental principles of quantification, enforceability, replicability, and accountability (57 FR 13567-68). SO<sub>2</sub> attainment plans must consist of two components: (1) emission limits and other control measures that assure implementation of permanent, enforceable, and necessary emission controls, and (2) a modeling analysis meeting the requirements of 40 CFR part 51, appendix W, which demonstrates that these emission limits and control measures provide for timely attainment of the primary SO<sub>2</sub> NAAQS as expeditiously as practicable, but by no later than the attainment date for the affected area. In all cases, the emission limits and control measures must be accompanied by appropriate methods and conditions to determine compliance with the respective emission limits and control measures and must be quantifiable (a specific amount of emission reduction can be ascribed to the measures), fully enforceable (specifying clear, unambiguous and measurable requirements for which compliance can be practicably determined), replicable (the procedures for determining compliance are sufficiently specific and non-subjective so that two independent entities applying the procedures would obtain the same result), and accountable (source specific limits must be permanent and must reflect the assumptions used in the SIP demonstrations).

EPA's 2014 SO<sub>2</sub> Nonattainment Guidance recommends that the emission limits established for the attainment demonstration be expressed as short-term average limits (e.g., addressing emissions averaged over one or three hours), but also describes the option to utilize emission limits with longer averaging times of up to 30 days so long as the state meets various suggested criteria. See 2014 SO<sub>2</sub> Nonattainment Guidance, pp. 22 to 39. The guidance recommends that—should states and sources utilize longer averaging times—the longer-term average limit should be set at an adjusted level that reflects a stringency comparable to the 1-

hour average limit at the critical emission value (CEV) shown to provide for attainment that the plan otherwise would have set.

The 2014 SO<sub>2</sub> Nonattainment Guidance provides an extensive discussion of EPA's rationale for concluding that appropriately set, comparably stringent limitations based on averaging times as long as 30 days can be found to provide for attainment of the 2010 SO<sub>2</sub> NAAQS. In evaluating this option, EPA considered the nature of the standard, conducted detailed analyses of the impact of 30-day average limits on the prospects for attaining the standard, and carefully reviewed how best to achieve an appropriate balance among the various factors that warrant consideration in judging whether a state's plan provides for attainment. *Id.* at pp. 22 - 39, and Appendices B, C, and D.

As specified in 40 CFR 50.17(b), the 1-hour primary SO<sub>2</sub> NAAQS is met at an ambient air quality monitoring site when the 3-year average of the annual 99<sup>th</sup> percentile of daily maximum 1-hour average concentrations is less than or equal to 75 ppb. In a year with 365 days of valid monitoring data, the 99<sup>th</sup> percentile would be the fourth highest daily maximum 1-hour value. The 2010 SO<sub>2</sub> NAAQS, including this form of determining compliance with the standard, was upheld by the U.S. Court of Appeals for the District of Columbia Circuit in *Nat'l Env't'l Dev. Ass'n's Clean Air Project v. EPA*, 686 F.3d 803 (D.C. Cir. 2012). Because the standard has this form, a single exceedance does not create a violation of the standard. Instead, at issue is whether a source operating in compliance with a properly set longer term average could cause exceedances, and if so, the resulting frequency and magnitude of such exceedances, and in particular, whether EPA can have reasonable confidence that a properly set longer term average limit will provide that the average fourth highest daily maximum value will be at or below 75 ppb. A synopsis of how EPA evaluates whether such plans "provide for attainment," based on modeling of projected allowable emissions and in light of the NAAQS' form for determining attainment at monitoring sites, follows.

For SO<sub>2</sub> attainment plans based on 1-hour emission limits, the standard approach is to



conduct modeling using fixed 1-hour emission rates. The maximum modeled emission rate that results in attainment is labeled the “CEV.” The modeling process for identifying this CEV inherently considers the numerous variables that affect ambient concentrations of SO<sub>2</sub>, such as meteorological data, background concentrations, and topography. In the standard approach, the state would then provide for attainment by setting a continuously applicable 1-hour emission limit for each stationary SO<sub>2</sub> source at this CEV.

EPA recognizes that some sources have highly variable emissions, for example due to variations in fuel sulfur content and operating rate, that can make it extremely difficult, even with a well-designed control strategy, to ensure in practice that emissions for any given hour do not exceed the CEV. EPA also acknowledges the concern that longer-term emission limits can allow short periods with emissions above the CEV, which, if coincident with meteorological conditions conducive to high SO<sub>2</sub> concentrations, could in turn create the possibility of a NAAQS exceedance occurring on a day when an exceedance would not have occurred if emissions were continuously controlled at the level corresponding to the CEV. However, for several reasons, EPA believes that the approach recommended in its guidance document suitably addresses this concern. First, from a practical perspective, EPA expects the actual emission profile of a source subject to an appropriately set longer-term average limit to be similar to the emission profile of a source subject to an analogous 1-hour average limit. EPA expects this similarity because it has recommended that the longer-term average limit be set at a level that is comparably stringent to the otherwise applicable 1-hour limit (reflecting a downward adjustment from the CEV) and that takes the source’s emissions profile (and inherent level of emissions variability) into account. As a result, EPA expects either form of emission limit to yield comparable air quality.

Second, from a more theoretical perspective, EPA has compared the likely air quality with a source having maximum allowable emissions under an appropriately set longer term limit, as compared to the likely air quality with the source having maximum allowable emissions under

the comparable 1-hour limit. In this comparison, in the 1-hour average limit scenario, the source is presumed at all times to emit at the CEV, and in the longer-term average limit scenario, the source is presumed occasionally to emit more than the CEV, but on average, and presumably at most times, to emit well below the CEV. In an “average year,”<sup>4</sup> compliance with the 1-hour limit is expected to result in three exceedance days (i.e., three days with hourly values above 75 ppb) and a fourth day with a maximum hourly value at 75 ppb. By comparison, with the source complying with a longer-term limit, it is possible that additional exceedances would occur that would not occur in the 1-hour limit scenario (if emissions exceed the CEV at times when meteorology is conducive to poor air quality). However, this comparison must also factor in the likelihood that exceedances that would be expected in the 1-hour limit scenario would not occur in the longer-term limit scenario. This result arises because the longer-term limit requires lower emissions most of the time (because the limit is set below the CEV), so a source complying with an appropriately set longer-term limit is likely to have lower emissions at critical times than would be the case if the source were emitting as allowed with a 1-hour limit.

To illustrate this point, EPA conducted a statistical analysis using a range of scenarios using actual plant data. The analysis is described in Appendix B of EPA’s 2014 SO<sub>2</sub> Nonattainment Guidance. Based on the analysis described in the 2014 SO<sub>2</sub> Nonattainment Guidance, EPA expects that an emission profile with maximum allowable emissions under an appropriately set, comparably stringent 30-day average limit is likely to have the net effect of having a *lower* number of exceedances and better air quality than an emission profile with maximum allowable emissions under a 1-hour emission limit at the CEV. This result provides a compelling policy rationale for allowing the use of a longer averaging period, in appropriate circumstances where the facts indicate this result can be expected to occur.

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<sup>4</sup> An “average year” is used to mean a year with average air quality. While 40 CFR part 50, appendix T, provides for averaging three years of 99<sup>th</sup> percentile daily maximum hourly values (e.g., the fourth highest maximum daily hourly concentration in a year with 365 days with valid data), this discussion and an example below uses a single “average year” in order to simplify the illustration of relevant principles.

The 2014 SO<sub>2</sub> Nonattainment Guidance offers specific recommendations for determining an appropriate longer-term average limit. The recommended method starts with determination of the 1-hour emission limit that would provide for attainment (i.e., the CEV), and applies an adjustment factor to determine the (lower) level of the longer-term average emission limit that would be estimated to have a stringency comparable to the otherwise necessary 1-hour emission limit. This method uses a database of continuous emission data reflecting the type of control that the source will be using to comply with the SIP emission limits, which (if compliance requires new controls) may require use of an emission database from another source. The recommended method involves using these data to compute a complete set of emission averages, computed according to the averaging time and averaging procedures of the prospective emission limitation (i.e., using 1-hour historical emission values from the emissions database to calculate 30-day average emission values). In this recommended method, the ratio of the 99<sup>th</sup> percentile among these long-term averages to the 99<sup>th</sup> percentile of the 1-hour values represents an adjustment factor that may be multiplied by the candidate 1-hour emission limit (CEV) to determine a longer term average emission limit that may be considered comparably stringent.<sup>5</sup>

The 2014 SO<sub>2</sub> Nonattainment Guidance also addresses a variety of related topics, including the potential utility of setting supplemental emission limits, such as mass-based limits, to reduce the likelihood and/or magnitude of elevated emission levels that might occur under the longer-term emission rate limit.

Preferred air quality models for use in regulatory applications are described in Appendix A of the EPA's "Guideline on Air Quality Models (40 CFR part 51, appendix W)."<sup>6</sup> In 2005, the EPA promulgated the American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD) as the Agency's preferred near-field dispersion modeling for a wide range of regulatory applications addressing stationary sources (for example, in estimating

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<sup>5</sup> For example, if the CEV is 1000 pounds of SO<sub>2</sub> per hour, and a suitable adjustment factor is determined to be 70 percent, the recommended longer term average limit would be 700 pounds per hour.

<sup>6</sup> EPA published revisions to the "Guideline on Air Quality Models" on January 17, 2017.

SO<sub>2</sub> concentrations) in all types of terrain based on extensive developmental and performance evaluation. Supplemental guidance on modeling for purposes of demonstrating attainment of the SO<sub>2</sub> standard is provided in Appendix A to the 2014 SO<sub>2</sub> Nonattainment Guidance. Appendix A provides extensive guidance on the modeling domain, the source inputs, assorted types of meteorological data, and background concentrations. Consistency with the recommendations in this guidance is generally necessary for the attainment demonstration to offer adequately reliable assurance that the plan provides for attainment.

As stated previously, attainment demonstrations for the 2010 1-hour primary SO<sub>2</sub> NAAQS must demonstrate future attainment and maintenance of the NAAQS in the entire area designated as nonattainment (i.e., not just at the violating monitor) by using air quality dispersion modeling (see appendix W to 40 CFR part 51) to show that the mix of sources and enforceable control measures and emission rates in an identified area will not lead to a violation of the SO<sub>2</sub> NAAQS. For a short-term (i.e., 1-hour) standard, EPA believes that dispersion modeling, using allowable emissions and addressing stationary sources in the affected area (and in some cases those sources located outside the nonattainment area which may affect attainment in the area) is technically appropriate, efficient and effective in demonstrating attainment in nonattainment areas because it takes into consideration combinations of meteorological and emission source operating conditions that may contribute to peak ground-level concentrations of SO<sub>2</sub>.

The meteorological data used in the analysis should generally be processed with the most recent version of AERMET, the Meteorological data preprocessor for AERMOD. Estimated concentrations should include ambient background concentrations, should follow the form of the standard, and should be calculated as described in section 2.6.1.2 of the August 23, 2010 clarification memo on “Applicability of Appendix W Modeling Guidance for the 1-hr SO<sub>2</sub> National Ambient Air Quality Standard” (U.S. EPA, 2010) and EPA’s March 11, 2011 clarification memo, “Additional Clarification Regarding Application of Appendix W Modeling Guidance for the 1-hour NO<sub>2</sub> National Ambient Air Quality Standard.”

## **II. Summary of Pennsylvania's SIP Revision and EPA Analysis**

In accordance with section 172(c) of the CAA, the Pennsylvania attainment plan for the Indiana Area includes: (1) an emissions inventory for SO<sub>2</sub> for the plan's base year (2011); and (2) an attainment demonstration. The attainment demonstration includes the following: (1) analyses that locate, identify, and quantify sources of emissions contributing to violations of the 2010 SO<sub>2</sub> NAAQS; (2) a determination that the control strategy for the primary SO<sub>2</sub> sources within the nonattainment areas constitutes RACM/RACT; (3) a dispersion modeling analysis of an emissions control strategy for the primary SO<sub>2</sub> sources (Keystone, Conemaugh, Homer City, and Seward) purporting to show attainment of the SO<sub>2</sub> NAAQS by the October 4, 2018, attainment date; (4) requirements for RFP toward attaining the SO<sub>2</sub> NAAQS in the Area; (5) contingency measures; (6) the assertion that Pennsylvania's existing SIP-approved NSR program meets the applicable requirements for SO<sub>2</sub>; and (7) the request that emission limitations and compliance parameters for Keystone, Conemaugh, Homer City, and Seward be incorporated into the SIP.

On July 13, 2018 (83 FR 32606), EPA published a notice of proposed rulemaking (NPRM) in which EPA proposed full approval of Pennsylvania's Indiana, PA SO<sub>2</sub> attainment plan and SO<sub>2</sub> emission limits and associated compliance parameters for the Keystone, Homer City, Conemaugh and Seward sources. During the public comment period, the Sierra Club (in conjunction with the National Parks Conservation Association, PennFuture, Earthjustice, and Clean Air Council) submitted a modeling analysis which showed that the emission limits in the attainment plan did not assure attainment because one modeled receptor within the nonattainment area had a modeled design value that was above the SO<sub>2</sub> NAAQS. Sierra Club's modeling also showed violations of the SO<sub>2</sub> NAAQS outside of the nonattainment area. In response to this comment, on February 5, 2020, PADEP submitted supplemental information in support of the attainment plan. The February 5, 2020 submittal included: (1) a supplemental air dispersion modeling report; (2) supplemental air dispersion modeling data; (3) a supplemental air

dispersion modeling protocol; (4) a meteorological monitoring plan; (5) meteorological monitoring data; (6) meteorological monitoring quality assurance, quality control, and audit reports; (7) Clean Air Markets Division (CAMD) emissions data for 2010–2018; and (8) Continuous Emissions Monitoring (CEM) data for 2010 through the third quarter of 2019. The supplemental air dispersion modeling used a more refined model receptor grid than that in the original submittal, meteorological data collected near the controlling modeled source (Seward), and more recent (2016–18) background concentrations from the South Fayette SO<sub>2</sub> monitor (the monitor used to determine background concentrations in the original modeling analysis). The supplemental modeling did not address the violations occurring outside the nonattainment area that Sierra Club’s modeling identified. In order to allow for public comment on this supplemental information and modeling, on March 9, 2020 (85 FR 13602), EPA published a notice of data availability (NODA) for the February 5, 2020, submittal. During that public comment period, Sierra Club submitted new comments raising issues with the supplemental modeling.

On October 19, 2020 (85 FR 66240), EPA finalized full approval of the Pennsylvania SO<sub>2</sub> attainment plan for the Indiana, PA NAA (hereafter referred to as the “October 2020 final rule action” or the “October 2020 final action”). On December 18, 2020, the Sierra Club, Clean Air Council, and PennFuture filed a petition for judicial review with the U.S. Court of Appeals for the Third Circuit, challenging that final approval.<sup>7</sup> As mentioned earlier, on August 17, 2021, the U.S. Court of Appeals for the Third Circuit granted EPA’s request for remand without vacatur of the final approval of Pennsylvania’s SO<sub>2</sub> attainment plan for the Indiana, PA NAA. The court ordered EPA to take final action to respond to the remand no later than August 17, 2022. EPA has reconsidered that final action and is proposing to revise its prior full approval to a partial approval and partial disapproval based on the analysis and explanation below. EPA now proposes to determine that it was in error to fully approve the Indiana, PA SO<sub>2</sub> attainment

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<sup>7</sup> *Sierra Club, et. al. v. EPA*, Case No. 20-3568 (3<sup>rd</sup> Cir.).

plan, and is in the same manner as the prior full approval revising its prior action. See, CAA section 110(k)(6). EPA is proposing to retain the approval of the emissions inventory and nonattainment New Source Review (NNSR) program requirements, and is proposing disapproval of the attainment demonstration, RACM/RACT requirements, RFP requirements and contingency measures.

#### **A. Emissions Inventory Requirements**

States are required under section 172(c)(3) of the CAA to develop comprehensive, accurate and current emissions inventories of all sources of the relevant pollutant or pollutants in the nonattainment area. These inventories provide detailed accounting of all emissions and emissions sources of the pollutant or precursors. In addition, inventories are used in air quality modeling to demonstrate that attainment of the NAAQS is as expeditious as practicable. The SO<sub>2</sub> Nonattainment Guidance provides that the emissions inventory should be consistent with the Air Emissions Reporting Requirements (AERR) at Subpart A to 40 CFR part 51.<sup>8</sup>

For the base year inventory of actual emissions, a “comprehensive, accurate and current” inventory can be represented by a year that contributed to the three-year design value used for the original nonattainment designation. The 2014 SO<sub>2</sub> Nonattainment Guidance notes that the base year inventory should include all sources of SO<sub>2</sub> in the nonattainment area as well as any sources located outside the nonattainment area which may affect attainment in the area. Pennsylvania appropriately elected to use 2011 as the base year because the designation of nonattainment was based on data from 2009-2011. Actual emissions from all the sources of SO<sub>2</sub> in the Indiana Area were reviewed and compiled for the base year emissions inventory requirement. The primary SO<sub>2</sub>-emitting point sources located within the Indiana Area are Keystone, Conemaugh, Homer City, and Seward, all coal-fired power plants. Keystone and Conemaugh each have two pulverized coal-fired (PC) boilers; Homer City has three coal-fired

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<sup>8</sup> The AERR at subpart A to 40 CFR part 51 cover overarching federal reporting requirements for the states to submit emissions inventories for criteria pollutants to EPA’s Emissions Inventory System. EPA uses these submittals, along with other data sources, to build the National Emissions Inventory.

boilers; and Seward has two circulating fluidized bed (CFB) waste coal-fired boilers. More information about the emissions inventory for the Indiana Area (and analysis of the inventory) can be found in Pennsylvania's October 11, 2017, submittal as well as EPA's emissions inventory technical support document (TSD), which can be found under Docket ID No. EPA-R03-OAR-2017-0615 and online at [www.regulations.gov](http://www.regulations.gov).

Table 1 in this document shows the level of emissions, expressed in tons per year (tpy), in the Indiana Area for the 2011 base year by emissions source category. The point source category includes all sources within the Area.

**Table 1. 2011 Base Year SO<sub>2</sub> Emissions Inventory for the Indiana Area**

Emission Source Category	SO <sub>2</sub> Emissions (tpy)
Point	144,269.017
Area	555.610
Non-road	1.025
On-road	7.730
Total	144,833.382

EPA has evaluated Pennsylvania's 2011 base year emissions inventory for the Indiana Area and has made the preliminary determination that this inventory was developed in a manner consistent with EPA's guidance and that EPA appropriately approved this element of the attainment plan in its prior action. Therefore, pursuant to section 172(c)(3), EPA is not proposing to change its approval of Pennsylvania's 2011 base year emissions inventory for the Indiana Area to a disapproval, as it meets CAA requirements. Instead, EPA is proposing that the plan retain its approval with respect to the base year emissions inventory element.

## **B. New Source Review<sup>9</sup>**

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<sup>9</sup> The CAA NSR program is composed of three separate programs: Prevention of significant deterioration (PSD), NNSR, and Minor NSR. PSD is established in part C of title I of the CAA and applies in undesignated areas and in areas that meet the NAAQS—designated “attainment areas”—as well as areas where there is insufficient information to determine if the area meets the NAAQS—designated “unclassifiable areas.” The NNSR program is established in part D of title I of the CAA and applies in areas that are not in attainment of the NAAQS—designated “nonattainment areas.” The Minor NSR program addresses construction or modification activities that do not qualify as “major” and applies regardless of the designation of the area in which a source is located. Together, these programs are referred to as the NSR programs. Section 173 of the CAA lays out the NNSR program for preconstruction review of new major sources or major modifications to existing sources, as required by CAA section 172(c)(5). The programmatic elements for NNSR include, among other things, compliance with the lowest



Section 172(c)(5) of the CAA requires that an attainment plan require permits for the construction and operation of new or modified major stationary sources in a nonattainment area. Pennsylvania has a fully implemented Nonattainment New Source Review (NNSR) program for criteria pollutants in 25 Pennsylvania Code Chapter 127, Subchapter E, which was approved into the Pennsylvania SIP on December 9, 1997 (62 FR 64722). On May 14, 2012 (77 FR 28261), EPA approved a SIP revision pertaining to the pre-construction permitting requirements of Pennsylvania's NNSR program to update the regulations to meet EPA's 2002 NSR reform regulations. EPA then approved an update to Pennsylvania's NNSR regulations on July 13, 2012 (77 FR 41276), and on June 11, 2021 (86 FR 25951). These rules provide for appropriate NSR as required by CAA sections 172(c)(5) and 173 and 40 CFR 51.165 for SO<sub>2</sub> sources undergoing construction or major modification in the Indiana Area without need for modification of the approved rules. Therefore, in its prior approval action, EPA concluded that the Pennsylvania SIP meets the requirements of section 172(c)(5) for the Indiana Area. EPA continues to believe that the Pennsylvania SIP meets this requirement and is not proposing to change its action to disapproval for the NNSR element. Instead, EPA is proposing that the plan retain its approval with respect to the NNSR element.

### **C. Attainment Demonstration**

The SO<sub>2</sub> attainment demonstration provides air quality dispersion modeling analyses intended to demonstrate that control strategies chosen to reduce SO<sub>2</sub> source emissions will bring the area into attainment by the statutory attainment date of October 4, 2018. The modeling analyses are used to assess the control strategy for a nonattainment area and establish emission limits that will provide for attainment. The analyses require five years of meteorological data to simulate the dispersion of pollutant plumes from multiple point, area, or volume sources across

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achievable emissions rate and the requirement to obtain emissions offsets.

the averaging times of interest.<sup>10</sup> The modeling demonstration typically also relies on maximum allowable emissions from sources in the nonattainment area. Modeling analyses that provide for attainment under all scenarios of operation for each source must, therefore, consider the worst-case scenario of both the representative meteorology (e.g., predominant wind directions, stagnation, etc.) and the maximum allowable emissions. In this way, the attainment demonstration shows that the emissions limits in the SIP provide for attainment under all worst-case meteorological and emissions scenarios that are permissible under the limits.

In its October 11, 2017, and February 5, 2020, submissions, PADEP provided multiple modeling analyses as their attainment demonstration. In order to better explain our review of each analysis, EPA has categorized them – first to address Pennsylvania’s request to use an alternative model option (AERMOIST) in the attainment plan, and then to address the modeling used to develop emission limits for the four main sources of SO<sub>2</sub> emissions. This is the same approach EPA used to review the modeling analyses for the October 2020 final rule action that fully approved the plan.

In relation to the alternative model request, PADEP provided: (1) an analysis using the default option in EPA’s preferred dispersion modeling system, AERMOD; and (2) an analysis utilizing AERMOD but including a procedure called AERMOIST, an alternative model option which accounts for additional plume rise associated with the latent heat release of condensation due to moisture in a stack’s plume. AERMOIST is currently not approved by EPA for regulatory use.

On July 13, 2018, EPA rejected PADEP’s request to use AERMOIST in its attainment demonstration. 83 FR 32606. EPA is not proposing to change our previous rejection of the AERMOIST procedure in this action, nor did we in the October 2020 final action. EPA’s

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<sup>10</sup> The period of meteorological data needed for an air-quality analysis is described in section 8.4.2 (e) of appendix W: “[T]he use of five years of adequately representative National Weather Service or comparable meteorological data, at least one year of site-specific, or at least three years of prognostic meteorological data, are required.”

conclusion from its review of AERMOIST in the previous action still applies, which was that the AERMOIST procedure is not an appropriate option for use in the Indiana attainment plan for the following reasons: (1) there is no multi-monitor database of SO<sub>2</sub> monitoring data available for the four major sources of SO<sub>2</sub> in the Indiana Area to conduct a source-specific statistical test to determine if AERMOIST provides a definitive improvement over the current regulatory default version of AERMOD; (2) AERMOIST was universally applied to all the major sources in the Indiana Area regardless of whether the source plumes are actually saturated; and (3) there is a lack of supporting analysis for using relative humidity measurements in AERMOIST.<sup>11</sup>

PADEP submitted multiple additional modeling analyses not relying upon AERMOIST to develop and/or support emission limits for the four main sources of SO<sub>2</sub> emissions in the Indiana Area: (1) a February 5, 2020 modeling analysis using randomly reassigned emission (RRE) values to support the 30-day limit for Seward; (2) an October 11, 2017 modeling analysis using RRE values to support the 30-day limit for Seward; (3) an October 11, 2017 modeling analysis using RRE values to develop a 24-hour emission limit for Keystone; (4) a February 5, 2020 modeling analysis to reexamine the Critical Emission Value (CEVs) for Keystone, Conemaugh, Homer City and Seward; and (5) an October 11, 2017 modeling analysis to determine the CEVs for the four main SO<sub>2</sub> sources: Keystone, Conemaugh, Homer City and Seward.

In the October 2020 final action, EPA focused our review on the CEV and RRE modeling from the February 5, 2020, submittal used to support Seward's longer-term limit and on review of the CEV and RRE modeling in the October 11, 2017 submittal used to develop Keystone's longer-term limit. Our reconsideration of these reviews, and the reasons for why we now think we were in error to fully approve the analyses, is explained in detail below.

EPA reviewed the October 11, 2017, and the February 5, 2020, modeling analyses, which

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<sup>11</sup> A detailed discussion of the deficiencies of the AERMOIST modeling analysis submitted for the Indiana Area can be found in EPA's AERMOIST modeling TSD for the Indiana Area which can be found under Docket ID No. EPA-R03-OAR-2017-0615 and available online at [www.regulations.gov](http://www.regulations.gov).

were used by PADEP to determine the CEVs for Keystone, Conemaugh, Seward and Homer City.<sup>12</sup> In the October 11, 2017, submittal, the Indiana Area was divided into two separate modeling domains. One domain included portions of Armstrong County which only addressed emissions from Keystone as a source. The other domain covered all of Indiana County and addressed emissions from all four sources in the nonattainment area. For both domains, background concentrations included impacts from non-modeled sources. Each separate model domain used its own (different) background concentration. EPA continues to agree with Pennsylvania that two modeling domains are appropriate due to the long distance between Keystone and the other three sources, and the predominant wind direction. EPA also continues to assert that the use of a different, and higher background for the Keystone CEV modeling, while not required, provides additional assurances that the CEV for Keystone is protective of the NAAQS. 85 FR 66420.

AERMOD was used to determine the CEVs for Conemaugh, Keystone, and Seward where the modeled 1-hour emission rates demonstrate attainment of the 2010 1-hour SO<sub>2</sub> NAAQS. The SO<sub>2</sub> emission rates for Homer City were based on the unit 1, unit 2, and unit 3 combined mass-based SO<sub>2</sub> emission limits established in Plan Approval 32-00055H,<sup>13</sup> which authorized the installation of Novel Integrated Desulfurization (NID) systems, often referred to as Dry Flue Gas Desulphurization (FGD) systems on unit 1 and unit 2. This 1-hour SO<sub>2</sub> limit was based on air dispersion modeling that demonstrated attainment of the 2010 1-hour SO<sub>2</sub> NAAQS.

In the February 5, 2020, modeling analysis, an alternative finer scale grid in the southeast

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<sup>12</sup> Refer to EPA's Modeling TSDs for the Indiana Area under Docket ID EPA-R03-OAR-2017-0615, available at [www.regulations.gov](http://www.regulations.gov) for EPA's review of the modeling domains (TSD For the Modeling Portions of the Document Entitled "State Implementation Plan Revision: Attainment Demonstration and Base Year Inventory Indiana, PA Nonattainment Area for the 2010 1-Hour Sulfur Dioxide National Ambient Air Quality Standard," dated October 2017 pages 9-14, and TSD For the Modeling Portions of the Document Entitled "Supplemental Information to Address a Comment Received by the EPA on Pennsylvania's 1-hour Sulfur Dioxide Attainment Demonstration for the Indiana, Pennsylvania Nonattainment Area" submitted on February 5, 2020 pages 12-15) and 85 FR 66240 at 66247- 66248.

<sup>13</sup> Plan Approval 32-00055H was issued on April 2, 2012, and modified on April 4, 2013, by PADEP.

corner of the original Indiana County domain was used, as well as multi-level site-specific meteorological data that were generated during the period from September 2015 through August 2016, and updated background concentrations. When all the updates were modeled, Seward's 1-hour CEV had to be reduced approximately 11% from the original CEV to show attainment with the NAAQS (CEV changed from 5,079 lb/hr to 4,500 lb/hr). The CEVs for the other three SIP sources did not change. The CEV rates used in the demonstration analysis for each of the four sources are summarized in the following table. The modeled emission rate in grams per second was converted to pounds per hour, which is the CEV for each source.<sup>14</sup> Upon reconsideration, EPA is not proposing to change the October 2020 decision that the CEVs were modeled correctly.<sup>15</sup>

**Table 2. February 5, 2020 Model Run Results - Critical Emission Values**

<b>Source</b>	<b>Critical Emission Value - SO<sub>2</sub> Emission Rates Modeled in Attainment Model Run (g/s)</b>	<b>Critical Emission Value - SO<sub>2</sub> Emission Rates Modeled in Attainment Model Run (lb/hr)</b>
<b>Seward</b>	566.99	4500.0
<b>Homer City Unit 1</b>	195.30	1550.0
<b>Homer City Unit 2</b>	195.30	1550.0
<b>Homer City Unit 3</b>	410.75	3260.0
<b>Keystone</b>	1223.60	9711.1
<b>Conemaugh</b>	426.00	3381.0

The October 11, 2017, submittal also included a modeling analysis using randomly reassigned historical hourly emissions for Keystone for 100 AERMOD simulations (referred to as RRE Modeling). The hourly modeled emission values were based on 2016 actual hourly emissions that reflect emission patterns based on plant operations and reassigned to

<sup>14</sup> Based on the National Institute of Standards and Technology conversion: 1 pound = 453.59237 grams

<sup>15</sup> While the current CEV modeling is not a reason for disapproval, as discussed later in the preamble, EPA encourages Pennsylvania to ensure that the revised attainment plan includes modeling that provides for attainment in all areas with known NAAQS violations.

determined fixed values through a binning approach in which the upper limit for each corresponding bin was used as the modeled emission rate. The emissions profile was such that the actual emission rate for 15% of the hours per year were above the CEV of 9,711 lb/hr, and those hours fell within 15 days in each month. Because of this pattern, where hourly actual emissions values above the CEV were clustered together on a limited number of days rather than individually dispersed throughout the year, Pennsylvania created a “rule” in the modeling of binned reassigned fixed values, whereby the actual hours over the CEV were modeled in separate clusters which Pennsylvania calls “high emission event days.” The total amount of SO<sub>2</sub> emissions each day, however, are constrained by a limit which restricts the total pounds of SO<sub>2</sub> emissions, on a 24-hour block average basis, to be at or below 9,600 lb/hr. The hours for which the emissions were modeled above the CEV were not randomly dispersed individually throughout the year because the plant did not and likely will not operate that way in order to meet the limit. Thus, these high emission events were modeled in a way that is representative of the variability in the historic (2016) emissions data and of expected emissions performance occurring in compliance with the allowable emissions limit (as asserted in Pennsylvania’s submittal).

The “rule” constrained the high emission events days to not exceed 9,604 lb/hr on a 24-hour block average; however, not every day was modeled with hourly emission rates resulting in a 24-hour block average approaching or equal to 9,604 lbs/hr. As previously described, the historical emissions data demonstrate that not every day is a high emission event day based on the historic variability of the source. Pennsylvania modeled about 50% of the days in a month where binned reassigned hourly SO<sub>2</sub> emissions were always below the CEV value and about 50% of the days in a month as high emission event days where there were at least three hours of binned reassigned emissions over the CEV during those 24 hours. The high emission events days included nine days (30% of the days) in a month where the 24-hour averages were near 9,600 lb/hr. The remaining six high emission event days per month experienced three hours of

emissions above the CEV, yet emissions during the remaining hours of the day resulted in the 24-hour daily average falling at 6,333 lb/hr for five of the six days and at 8,964 lb/hr for one of the six days. However, the other hours in these days were assigned values at or below the CEV, reflecting the predominance of values below the CEV in the modeled emissions distribution (which in turn reflected the predominance of values below the CEV in the historical record), resulting in daily average emission rates for these days below 9,600 lb/hr. The remaining days (not categorized as high emission events days) had 24-hour daily average emissions between 5,000 lb/hr and 6,200 lb/hr.

Pennsylvania developed 100 different annual emission profiles using the historic data of high emission event days, and randomly re-assigning the other hourly emissions such that the 24-hour limit of 9,600 lbs/hr is modeled during 30% of the days across each month. These emission files provide a large array of temporally varying hourly actual emissions which take into account the “rule” where hourly actual emissions above the CEV are clustered together into high emission event days, reflecting the variability in the historic emissions data and historic plant operations. Each of the 100 emissions scenarios were modeled with five years of meteorological data using AERMOD. For each of the 100 5-year AERMOD simulations for Keystone, the 5-year average of the 99<sup>th</sup> percentile of the daily maximum 1-hour SO<sub>2</sub> modeled concentrations were below the NAAQS.<sup>16</sup>

When reconsidering the RRE modeling for Keystone, EPA examined whether the RRE modeling provided the necessary analysis to determine if the longer term limits were comparably stringent to the modeled 1-hour CEVs and whether the RRE approach demonstrated that the longer term limits provided for attainment.

While the 2014 SO<sub>2</sub> Nonattainment Guidance did not preclude states from using other approaches to determine appropriate longer term average limits, EPA did recommend that in all

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<sup>16</sup> See EPA’s March 1, 2011 clarification memo “Additional Clarification Regarding Application of Appendix W Modeling Guidance for the 1-hour NO<sub>2</sub> National Ambient Air Quality Standard.”

cases the analysis begin with the determination of the CEV (a constant hourly emissions level at which attainment is modeled to occur) and include an assessment showing that the longer term limits are of comparable stringency to the 1-hour CEV. This is a critical element in the attainment demonstration because it provides a similar level of assurance that complying with the longer term limit, in lieu of the hourly limit reflecting the modeled CEV, will also provide for attainment.

As described earlier, Pennsylvania provided adequate CEV modeling for Keystone, Seward, Homer City, and Conemaugh, but Pennsylvania did not provide evidence that the longer term limits derived via the application of RRE modeling were comparable in stringency to the 9,711 lb/hr CEV for Keystone. Essentially, the necessary steps to establish the comparably stringent relationship between a modeled 1-hour CEV and longer term limits were not taken.

In the October 2020 final rule action, EPA did not address whether the longer term limits derived via the RRE modeling of binned reassigned historical emissions were in fact comparably stringent to the 1-hour CEV, and at that time only focused our review on whether the RRE modeling of binned re-assigned historical actual emissions projected future emissions performance that would result in NAAQS attainment. In that final rule, EPA stated that “the RRE modeling provided enough permutations of emissions and meteorology that we can be reasonably confident that Keystone’s longer-term limit is protective of the NAAQS. This conclusion is based upon the large number of emission distribution profiles (100), the frequency and distribution of high emission event days, the 9,600 lb/ hr 24-hour emission limit modeled 30% of the days per month, emissions inputs reflective of the variability in historic plant operations, and meteorological data (five years of National Weather Service data).” (85 FR 66240 at 66244).

Upon reconsideration, EPA has determined that without a comparably stringent analysis and a clear link between the modeled 1-hour CEV and the longer term limit, EPA does not have



adequate assurance that Keystone's longer term limit, considering worst case emissions scenarios permissible under the limit, is protective of the 1-hour SO<sub>2</sub> standard. EPA did not address this issue clearly in the October 2020 final action; however, EPA was clear in the 2014 SO<sub>2</sub> Guidance, which states, "A comparison of the 1-hour limit and the proposed longer term limit, in particular an assessment of whether the longer term average limit may be considered to be of comparable stringency to a 1-hour limit at the critical emission value, would be a critical element of a demonstration that any longer term average limits in the SIP will help provide adequate assurance that the plan will provide for attainment and maintenance of the 1-hour NAAQS." (pg. 26).

In addition to not having established that the longer term limits are comparably stringent to the 1-hour CEV, Pennsylvania's binning approach used in the RRE modeling was dependent upon historical emissions performance and assumed continued performance that was well below that which is permissible under the limit. The binned emissions approach may have been a valid way to characterize factual air quality resulting from actual emissions and may be useful in a designations or attainment determination context. However, because the approach did not characterize maximally possible emissions that could occur in compliance with the emission limit nor provide a comparably stringent analysis, EPA now considers that it falls short of demonstrating that the limits will provide for attainment under all worst case emissions scenarios that are permissible under the limit, and that it was incorrect for EPA to fully approve the attainment demonstration in the absence of this demonstration.

In order to establish the comparable stringency of a longer term limit to a modeled attaining 1-hour CEV, EPA's 2014 Guidance recommended using a comparison of the 99<sup>th</sup> percentile of historic hourly emissions to the 99<sup>th</sup> percentile of the longer term averaged emissions of the same dataset to develop an adjustment factor for use in converting the modeled 1-hour CEV to a comparably stringent longer term limit. The focus on the 99<sup>th</sup> percentile of data is purposeful to ensure that extreme hourly variability was correctly accounted for in developing

the longer term limits and showing that the longer term limits account for the worst case emissions performance that is permissible under the limits. Generally, when applying EPA's recommended methodology for developing a comparably stringent longer term limit, a source with a history of frequent spikes of high hourly emissions will have a lower adjustment factor, resulting in a greater reduction in the numeric value of the comparably stringent longer term limit, than a source with less frequent spikes of high hourly emissions. Development of a longer term limit based on a variability metric other than the 99<sup>th</sup> percentile metric of the historic emissions variability should be accompanied by justification of how the longer term limit is comparably stringent to the 1-hour CEV. In the RRE analysis for Keystone, the Commonwealth of Pennsylvania used the actual hourly emissions distribution of one year (2016) to generate 100 hourly emissions profiles to use in the modeling. Pennsylvania's analysis (i.e., RRE approach) was an assessment of hourly emissions with no assurance (via a comparably stringent consideration) that prospective (future) hourly emissions when complying with the longer term limit (potentially worst case scenarios) were properly accounted for. Pennsylvania did not provide a justification for using a metric other than the 99<sup>th</sup> percentile of hourly emissions data to support Keystone's longer-term limit. This means that Pennsylvania did not establish that the longer term limit for Keystone was comparably stringent to an attaining 1-hour CEV, and that EPA erred in approving the attainment demonstration and limit as providing for NAAQS attainment. Thus, EPA is proposing to correct its prior approval to a disapproval of the attainment demonstration for Keystone.

In the February 5, 2020, submittal, Pennsylvania included an RRE analysis for Seward to support its already established 30-day average SO<sub>2</sub> limit of 3,038.4 lb/hr. First, Pennsylvania determined Seward's CEV of 4,500 lb/hr using AERMOD.<sup>17</sup> Then, using 2016-2018 emissions from Seward, Pennsylvania developed a binned emissions dataset to be used in formulating the

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<sup>17</sup> This CEV and the description provided are based on Pennsylvania's updated analysis which was provided to EPA on February 5, 2020. The CEV for Seward in the October 11, 2018 submittal was 5,079 lb/hr.

inventories modeled in 100 AERMOD simulations. Pennsylvania used a total of 13 bins, including five bins ranging from an upper level of 2,000 lbs/hour to an upper level of 4,500 lbs/hour and eight bins at various ranges above the CEV. Hours without operation were represented as hours with 2,000 lbs/hour, and all the other hours were represented with the upper level of the applicable bin. The dataset included 2.5% of hourly emissions above the CEV (or 220 hours). This was based on how the plant historically operated while complying with this 30-day limit during the applicable time period and how it is expected to operate into the future while in compliance with the 30-day limit. The hours above the CEV were distributed across four high emission events, where the duration of each event was 4, 7, 12, or 16 hours, with the frequency of those events being twice per month, monthly, every six months and once per year, respectively, such that these 220 hours above the CEV were spread across 39 days. The remaining 97.5% of hourly emissions were below the CEV and randomly assigned throughout the annual emissions profile.

Pennsylvania calculated a weighted average of the hourly emissions in the binned inventory by multiplying the bin level times the percentage of hours in each bin and summing the results. This sum, representing the average of the modeled emissions, equaled 3,088 lb/hr. Despite minor variations resulting from the random distribution process, each of the 100 AERMOD simulations had approximately this average level of emissions.

Pennsylvania developed 100 different annual emission profiles using the historic data of high emission event days, and randomly assigning the other hourly emissions such that the average of the 30-day averages of each simulation was close to 3,088 lb/hr. Seward's SO<sub>2</sub> emissions limit of 3,038.4 lb/hr on a 30-day rolling average basis is approximately 50 lb/hr less than the approximate average emissions value used in the AERMOD simulations.

As similarly described above for Keystone, when reconsidering the RRE modeling for Seward, EPA has now examined whether the RRE modeling provided the necessary analysis to determine if the longer term limits were comparably stringent to the modeled 1-hour CEVs.

Upon reconsideration, EPA has found that the RRE modeling used to support Seward's longer term limit did not provide evidence that the longer term limit is comparably stringent to Seward's CEV of 4,500 lb/hr. As noted previously in the preamble, the CEV for Seward decreased 11% from 5,079 lb/hr in the October 11, 2017, submittal to 4,500 lb/hr in the February 5, 2020, submittal, due to updates to model inputs, in particular, site specific meteorology data, a more refined receptor grid, and updated emissions data. The RRE derived longer-term limit, however, did not change from one submittal to the next. This highlights the failed linkage of the modeled CEV to this longer term limit. In the October 2020 final action, EPA failed to address this critical element in determining whether the State had adequately shown that allowable emissions performance in compliance with a longer term limit for Seward ensures NAAQS attainment.

In relation to whether the binned approach used for Seward's RRE modeling provided adequate assurance that hourly emissions when in compliance with the longer term limit provided for attainment, EPA notes that the binned approach did not account for the 99<sup>th</sup> percentile of historic hourly data, nor did it provide evidence that an analysis based on a metric other than 99<sup>th</sup> percentile of hourly emissions data could result in a comparably stringent longer term limit. This means that PADEP did not establish that the longer term limit for Seward was comparably stringent to an attaining 1-hour CEV, and that EPA erred in approving the attainment demonstration and limit as providing for NAAQS attainment. Thus, EPA is proposing to correct its prior approval to a disapproval of the attainment demonstration for Seward.

#### **D. RACM/RACT**

CAA section 172(c)(1) requires that each attainment plan provide for the implementation of all reasonably available control measures (i.e., RACM) as expeditiously as practicable and shall provide for attainment of the NAAQS. Section 172(c)(6) requires SIPs to contain enforceable emission limitations and control measures as may be necessary or appropriate to

provide for NAAQS attainment. EPA interprets RACM, including RACT, under section 172 as measures that a state determines to be both reasonably available and contribute to attainment as expeditiously as practicable “for existing sources in the area.”

Pennsylvania’s October 11, 2017, submittal discusses Federal and state measures that Pennsylvania asserts will provide emission reductions leading to attainment and maintenance of the 2010 SO<sub>2</sub> NAAQS. With regard to state rules, Pennsylvania cites its low sulfur fuel rules, which were SIP-approved on July 10, 2014 (79 FR 39330). Pennsylvania’s low sulfur fuel oil provisions apply to refineries, pipelines, terminals, retail outlet fuel storage facilities, commercial and industrial facilities, and facilities with units burning regulated fuel oil to produce electricity and domestic home heaters. These low sulfur fuel oil rules reduce the amount of sulfur in fuel oils used in combustion units, thereby reducing SO<sub>2</sub> emissions and the formation of sulfates that cause decreased visibility.

The October 11, 2017, submittal also discusses that the main SO<sub>2</sub> emitting sources at Conemaugh, Homer City, Keystone, and Seward are all equipped with FGD systems (wet limestone scrubbers, dry FGD, or in-furnace limestone injection systems) to reduce SO<sub>2</sub> emissions. Table 3 in this document lists the control technology at each of the main SO<sub>2</sub> emitting sources at each facility.

**Table 3. Control Technology at the Four Major SO<sub>2</sub> Sources in the Indiana Area**

<b>Facility</b>	<b>Unit</b>	<b>SO<sub>2</sub> Control</b>	<b>Control Installation Date</b>
Conemaugh	031 – Main Boiler 1	Wet limestone scrubber	~1994
	031 – Main Boiler 2	Wet limestone scrubber	~1995
Homer City	031 – Boiler 1	Dry FGD	11/18/2015
	032 – Boiler 2	Dry FGD	5/23/2016
	033 – Boiler 3	Wet limestone scrubber	~2002
Keystone	031 – Boiler 1	Wet limestone scrubber	9/24/2009
	032 – Boiler 2	Wet limestone scrubber	11/22/2009
Seward	034 – CFB Boiler 1	In-furnace limestone injection	~2004

	035 – CFB Boiler 2	In-furnace limestone injection	~2004
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With these controls installed, the October 11, 2017, submittal discusses facility-specific control measures, namely SO<sub>2</sub> emission limits for Conemaugh, Homer City, and Seward, and new SO<sub>2</sub> emission limits for Keystone. Keystone’s new limits were developed through air dispersion modeling (default AERMOD as described below) submitted by PADEP. In order to ensure that the Indiana Area demonstrates attainment with the SO<sub>2</sub> NAAQS, PADEP asserts that the following combination of emission limits at the four facilities is sufficient for the Indiana Area to meet the SO<sub>2</sub> NAAQS and serve as RACM/RACT:

- Conemaugh’s current SO<sub>2</sub> emission limits contained in the Title V Operating Permit (TVOP) 32-00059 because the emission limits for Conemaugh determined by the modeling as necessary for SO<sub>2</sub> attainment would be less stringent;
- Seward’s current SO<sub>2</sub> emission limit in TVOP 32-00040 because the emission limits for Seward determined by the modeling as necessary for SO<sub>2</sub> attainment would be less stringent;
- Homer City’s current SO<sub>2</sub> emission limits established in Plan Approval 32-00055H and Plan Approval 32-00055I; and
- A new, more stringent combined SO<sub>2</sub> emission limit for Keystone Unit 1 and Unit 2 of 9,600 lbs/hr block 24-hour average limit.

The emission limits for each of the SO<sub>2</sub>-emitting facilities are listed in Table 4 in this document.

**Table 4. SO<sub>2</sub> Emission Limits for Indiana Area Facilities**

Facility	Source Description	Emission Limit (lbs/hr)	Averaging Period
Conemaugh	Unit 1	1,656 (TVOP 32-00059)	3-hour block
	Unit 2		
Homer City	Unit 1	6,360 (Plan Approval 32-00055H) and limits specified in Plan Approval 32-00055I	1-hour block
	Unit 2		
	Unit 3		
Keystone	Unit 1	9,600 (New limit based on default AERMOD)	24-hour block
	Unit 2		

Seward	Unit 1	3,038.4 (TVOP 32-00040)	30-day rolling
	Unit 2		

The emission limits for Conemaugh, Keystone and Seward have averaging times greater than 1-hour (ranging between three hours and 30 days). The SO<sub>2</sub> limits at Conemaugh are set to a 3-hour block average. This average is roughly in line with the CEV modeled limit and the ratio from Appendix C in EPA's 2014 SO<sub>2</sub> Nonattainment Guidance. Keystone's limits were set to a 24-hour block average based on the 100 RRE simulation method discussed in the Attainment Demonstration section in this proposed rulemaking. A similar approach was used to establish a 30-day rolling average for Seward. Appendices C-1a and C-4 of Pennsylvania's October 11, 2017, SIP submittal, and the modeling report of the February 5, 2020, submittal, provide detailed explanation of the longer-term emission limits.

EPA expects to consider the following factors in evaluating the adequacy of plans with limits based on longer averaging times: (1) whether the numerical value of the mass emissions limit averaged over a longer time is comparably stringent to a 1-hour limit at the CEV; and (2) whether the longer-term average limit, potentially in combination with other limits, can be expected to constrain emissions sufficiently so that any occasions of emissions above the CEV will be limited in frequency and magnitude and, if they occur, would not be expected to result in NAAQS violations.

EPA analyzed the last five years of emissions data for Keystone and Seward in order to understand the source's historic emissions variability. EPA used the methodology described in Appendix C of the 2014 SO<sub>2</sub> Nonattainment Guidance to calculate adjustment factors for each source. Refer to EPA's TSD entitled Reconsideration of the Attainment Plan for the Indiana, PA 1-Hour SO<sub>2</sub> Nonattainment Area (January 2022) for a detailed description of EPA's analysis.

The 2014 SO<sub>2</sub> Nonattainment Guidance recommends the use of a data set that reflects hourly data for at least 3 to 5 years of stable operation (i.e., without changes that significantly alter emissions variability) to obtain a suitably reliable analysis. EPA analyzed two 3-year

periods and one 5-year period for Keystone, and one 3-year period and one 5-year period for Seward for illustrative purposes. Because the analyses for Seward and Keystone were done for illustrative purposes, the adjustment factors resulting from the analyses are also only for illustrative purposes. Using the current CEV for Keystone of 9,711 lb/hr, and depending upon the years of data used, Keystone's 24-hour block limits could be either 8,573.0 lbs/hr, 8,959.5 lb/hr, or 8,225.3 lbs/hr. Using Seward's CEV determined by Pennsylvania's supplemental analysis (4,500 lbs/hr) the 30-day rolling limit would be 3,484.3 lbs/hr using the 3-year adjustment factor and 2,575.3 lbs/hr using the 5-year adjustment factor.

EPA compared these values to Pennsylvania's RRE modeling derived 24-hr limit for Keystone (9,600 lb/r) and the 30-day limit for Seward (3,038 lb/hr). For Keystone, the comparably stringent values calculated by EPA are between 640 and 1,375 lb/hr less than the limit Pennsylvania claimed was protective of the standard, which was 9,600 lb/hr on a 24-hour block basis. The significant difference between Pennsylvania's RRE-derived 24-hour limit for Keystone and the potential 24-hour limits calculated by EPA using Appendix C of the 2014 SO<sub>2</sub> Guidance calls into question whether Keystone's RRE-derived 24-hour limit of 9,600 lb/hr is comparably stringent to the 1-hr CEV. If the RRE-derived limit is not comparably stringent to the CEV that was modeled to show attainment of the SO<sub>2</sub> NAAQS, then it is uncertain whether the longer-term 24-hour limit will provide for attainment of the NAAQS.

For Seward, when using the last three years of available emissions data (2018-2020), EPA calculated 30-day emission limit following the Appendix C methodology is 446 lb/hr more than the adopted limit of 3,038 lb/hr. When using the last five years of available emissions data (2016-2020), EPA calculated 30-day limit is 463 lb/hr less than Seward's current limit. The large difference in these 30-day limits probably results from the decrease in SO<sub>2</sub> emission spikes at Seward, both in frequency and magnitude, that occurred after 2017. Seward's SO<sub>2</sub> emissions spikes have declined in magnitude and frequency over the last 3 years, which may be due to the operational changes referenced in the February 5, 2020, submittal. The 30-day average SO<sub>2</sub> limit



for Seward has been in place since 2001 and has not been supplemented with additional limits to reflect the operational changes noted. As mentioned earlier in the preamble, EPA must consider whether the longer-term average limit can be expected to constrain emissions sufficiently so that emissions above the CEV will be limited in frequency and magnitude and, if they occur, would not be expected to result in NAAQS violations. Historic hourly emissions (described in the January 2022 TSD) before 2018 show that it is possible for this source to be in compliance with the 30-day limit of 3,038 lb/hr yet have up to 171 hours over the CEV. This data supports EPA's earlier conclusion that the current limit, by itself, does not adequately constrain the frequency and magnitude of hourly exceedances of the CEV and is not comparably stringent to the CEV.

As described earlier in the preamble, in EPA's October 2020 final action on this attainment plan, EPA failed to consider a critical aspect of longer-term limits in relation to the 1-hour SO<sub>2</sub> NAAQS, which was whether the longer-term limits for Keystone and Seward were comparably stringent to their CEVs and therefore support a conclusion that compliance with the longer term limits will provide for NAAQS attainment, which is necessary to meet the RACM/RACT requirement under EPA's SO<sub>2</sub> policy. Absent a comparably stringent analysis from Pennsylvania, EPA is proposing that it erred in previously approving the RACM/RACT element for the Indiana Area SIP and proposes to change its prior approval of the RACM/RACT element to a disapproval of the RACT/RACM element for Seward and Keystone.

The emission limits of the four SIP sources and all related compliance parameters (i.e., the measures which include system audits, record-keeping and reporting, and corrective actions) have been incorporated into the SIP via EPA's final approval of the Indiana, PA SO<sub>2</sub> attainment plan (85 FR 66240, October 19, 2020) which made these changes federally enforceable. EPA is proposing to retain the emission limits and compliance parameters for the main sources of SO<sub>2</sub> in the SIP as SIP strengthening measures while Pennsylvania works on revised limits for its attainment plan. Maintaining these limits and measures as SIP strengthening measures is appropriate for limits that improve air quality but do not meet a specific CAA requirement (see

## **E. RFP Plan**

Section 172(c)(2) of the CAA requires that an attainment plan include a demonstration that shows RFP for meeting air quality standards will be achieved through generally linear, incremental improvements in air quality. Section 171(1) of the CAA defines RFP as “such annual incremental reductions in emissions of the relevant air pollutant as are required by this part (part D) or may reasonably be required by EPA for the purpose of ensuring attainment of the applicable NAAQS by the applicable attainment date.” As stated originally in the 1994 SO<sub>2</sub> Guidelines Document<sup>18</sup> and repeated in the 2014 SO<sub>2</sub> Nonattainment Guidance, EPA continues to believe that this definition is most appropriate for pollutants that are emitted from numerous and diverse sources, where the relationship between emissions from these numerous and diverse sources and the effect of those emissions on ambient air quality are difficult to ascertain. In such cases, emissions reductions may be required from numerous and varying types of sources in numerous locations. The relationship between ambient SO<sub>2</sub> concentrations and the sources of SO<sub>2</sub> emissions is much more discernable and definable. That is, it is easier to determine the effect on ambient SO<sub>2</sub> concentrations that SO<sub>2</sub> emission reductions from certain sources will produce. Moreover, the emissions reductions from these few sources necessary to attain the SO<sub>2</sub> NAAQS usually occur in one step, which often (but not always) results from installation of new or better controls on a few sources that represent a knowable, specific amount of SO<sub>2</sub> reductions, rather than the piecemeal and gradual adoption of controls or measures by numerous sources. Therefore, EPA interpreted RFP for SO<sub>2</sub> as adherence to an ambitious compliance schedule for the adoption of controls or newer limits on these SO<sub>2</sub> sources in both the 1994 SO<sub>2</sub> Guideline Document and the 2014 SO<sub>2</sub> Nonattainment Guidance.

The purpose of an ambitious compliance schedule is to ensure that SO<sub>2</sub> sources reach the

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<sup>18</sup> SO<sub>2</sub> Guideline Document, U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park, N.C. 27711, EPA-452/R-94-008, February 1994. Located at: <https://www.epa.gov/ttn/oarpg/tlpgm.html>.

SO<sub>2</sub> emission limits that were modeled to show attainment as soon as possible, but no later than the compliance date. If the emission limits themselves have not been shown to model attainment, then an ambitious compliance schedule will not necessarily result in attainment, and reasonable further progress toward attainment may not lead to attainment. As noted, on reconsideration EPA does not view the longer term emission limits derived by Pennsylvania using RRE modeling to be comparably stringent to the CEVs used in the modeling that demonstrated future attainment of the NAAQS. Therefore, EPA finds there is a lack of evidence showing that these longer term limits will yield a sufficient reduction in SO<sub>2</sub> emissions in the Indiana NAA to attain the NAAQS. As a result, EPA is proposing to determine that Pennsylvania's SO<sub>2</sub> attainment plan for the Indiana Area is not adequate to achieve attainment of the NAAQS because the RRE-derived longer term limits have not been adequately shown to provide for sufficient SO<sub>2</sub> emission reductions in the Indiana Area. Without this assurance, EPA is proposing to determine that it erred in previously approving the RFP element of Pennsylvania's SO<sub>2</sub> attainment plan for the Indiana Area. EPA proposes to change its prior approval of the RFP element to a disapproval of Pennsylvania's attainment plan with respect to the RFP requirements.

#### **F. Contingency Measures**

In accordance with section 172(c)(9) of the CAA, contingency measures are required as additional measures to be implemented in the event that an area fails to meet the RFP requirements or fails to attain the standard by its attainment date. These measures must be fully adopted rules or control measures that can be implemented quickly and without additional EPA or state action if the area fails to meet RFP requirements or fails to meet its attainment date and should contain trigger mechanisms and an implementation schedule. However, SO<sub>2</sub> presents special considerations. As stated in the final 2010 SO<sub>2</sub> NAAQS promulgation on June 22, 2010 (75 FR 35520), and in the 2014 SO<sub>2</sub> Nonattainment Guidance, EPA explained that because of the quantifiable relationship between SO<sub>2</sub> sources and control measures, provided that the attainment

plan demonstrates that emissions performance under the allowable emissions limits in the SIP provide for NAAQS attainment, it is appropriate that state agencies develop a comprehensive program to identify sources of violations of the SO<sub>2</sub> NAAQS and undertake an aggressive follow-up for compliance and enforcement of those emission limits.

The Consent Order and Agreements (COAs) or Consent Orders (COs) for Conemaugh, Homer City, Keystone, and Seward (*see* Appendices B-1 through B-4 of the October 11, 2017 submittal and updated permits submitted on February 5, 2020) each contain the following measures that are designed to keep the Indiana Area from triggering an exceedance or violation of the SO<sub>2</sub> NAAQS: (1) upon execution of the COA or CO, if SO<sub>2</sub> emissions from the combined SO<sub>2</sub> emitting sources at the facility exceed 99% of the SO<sub>2</sub> emissions limit for the facility, within 48 hours the facility is required to undertake a full system audit of the SO<sub>2</sub> emitting sources and submit a written report to PADEP within 15 days, and corrective actions shall be identified by PADEP as necessary; and (2) upon execution of the COA or CO, if the Strongstown monitor (ID 42-063-0004) measures a 1-hour concentration exceeding 75 ppb, PADEP will notify the facility in the NAA, and the facility is required to identify whether any of the SO<sub>2</sub>-emitting sources at the respective facility were running at the time of the exceedance, and within a reasonable time period leading up to the exceedance, not to exceed 24 hours. If any of the SO<sub>2</sub>-emitting sources were running at the time of the exceedance, the facility must then analyze the meteorological data on the day the daily exceedance occurred to ensure that the daily exceedance was not due to SO<sub>2</sub> emissions from the respective facility. The facility's findings must be submitted to PADEP within 30 days of being notified of the exceedance.

Additionally, if PADEP identifies a daily maximum SO<sub>2</sub> concentration exceeding 75 ppb at a PADEP-operated SO<sub>2</sub> ambient air quality monitor in the Indiana Area, within 5 days, PADEP will contact Conemaugh, Homer City, Keystone, and Seward to trigger the implementation of the daily exceedance report contingency measure described in section VIII.C. of the October 11, 2017, submittal. If necessary, section 4(27) of the Pennsylvania Air Pollution

Control Act (APCA) authorizes PADEP to take any action it deems necessary or proper for the effective enforcement of APCA and the rules and regulations promulgated under APCA. Such actions include the issuance of orders and the assessment of civil penalties. A more detailed description of the contingency measures can be found in section VIII of the October 11, 2017, submittal as well as the COAs and COs included in the submittal and included for incorporation by reference into the SIP.

EPA is proposing to change its prior finding that Pennsylvania's October 11, 2017 and February 5, 2020 submittals include sufficient contingency measures, since EPA is now proposing that they are based on the emission limits, including longer term emission limits, that on reconsideration EPA believes have not been shown as comparably stringent to the CEVs used in the modeling that demonstrated attainment and consequently cannot support a conclusion that compliance with the allowable limits in the attainment plan will provide for NAAQS attainment. Therefore, on reconsideration EPA proposes that it erred in previously approving the contingency measures submitted by Pennsylvania, and now proposes to correct this error by proposing to change its approval of this element to disapproval because they do not follow the 2014 SO<sub>2</sub> Nonattainment Guidance and do not meet the section 172(c)(9) requirements. Nevertheless, EPA is proposing to retain the contingency measures in the SIP which were approved into the SIP on October 19, 2020 (85 FR 66240), as SIP strengthening measures. Specific needed amendments to the contingency measures can be evaluated and determined in the context of developing a new attainment plan that appropriately demonstrates that its emission limits and control measures will provide for NAAQS attainment.

### **III. Summary of Sierra Club Modeling Analysis for Westmoreland and Cambria Counties Submitted During the Public Comment Period (83 FR 32606, July 13, 2018) and EPA Considerations**

#### **A. Modeled violations in Westmoreland and Cambria Counties**

During the public comment period for the proposed approval of this attainment plan (83

FR 32606, July 13, 2018), the Sierra Club (in conjunction with the National Parks Conservation Association, PennFuture, Earthjustice, and Clean Air Council) submitted a modeling analysis using actual emissions and the CEVs for Conemaugh and Seward which claimed to show violations of the SO<sub>2</sub> NAAQS outside of the nonattainment area, beyond the eastern border of Indiana county within nearby portions of Westmoreland and Cambria counties. The modeling used the same meteorological data, stack parameters, background concentrations and building downwash as Pennsylvania's October 11, 2017, submittal. The Sierra Club modeling used emission inputs of actual historical emissions (2013- 2018 quarter 1) and a finer receptor grid that included receptors outside Indiana County. When modeling 2015-2017 emissions, the resulting design value was 293.4 ug/m<sup>3</sup>, and when modeling 2013-2017 emissions, the resulting design value was 267.2 ug/m<sup>3</sup>.<sup>19</sup> The comment letter and modeling results can be found in the Docket for this action.

Under reconsideration, EPA notes that Sierra Club's modeling, using actual emissions and the CEVs for Conemaugh and Seward, although using slightly different data from PA's modeling, suggests that there are modeled SO<sub>2</sub> nonattainment violations outside the NAA, and nothing in PA's submittal rebuts the finding of nonattainment outside the NAA.

As stated in the October 2020 final rule action, although EPA does not consider that a failure to include an analysis of modeled SO<sub>2</sub> concentrations outside of the boundaries of the NAA is an independent basis on which to disapprove this attainment plan, EPA is now proposing to revise its prior full approval of the attainment plan to a partial disapproval in order to correct errors made in approving the attainment demonstration, and the RACM/RACT, RFP and contingency measure elements. EPA encourages the state, when developing a new attainment plan that would respond to this partial disapproval, if finalized, to additionally ensure that any

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<sup>19</sup> In the Round 3 intended designations (82 FR 41903) published September 5, 2017, EPA endorsed a value of 196.4 µg/m<sup>3</sup> (based on calculations using all available significant figures) as equivalent to the 2010 SO<sub>2</sub> standard. To avoid confusion, EPA is expecting attainment demonstrations to show achievement with concentrations at or below precisely 196.4 µg/m<sup>3</sup>.

revised attainment plan demonstrates attainment for all known modeled violations. EPA is also considering taking a separate statutory action under the Clean Air Act to address the modeled violations in Westmoreland and Cambria counties.

## **B. Environmental Justice Considerations**

EPA conducted an environmental justice (EJ) analysis on the Indiana NAA and Westmoreland and Cambria counties. The consideration of environmental justice concerns is consistent with the EPA Administrator's directive and presidential executive orders.<sup>20</sup> The EPA has defined environmental justice as "the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation and enforcement of environmental laws, regulations and policies."<sup>21</sup> A detailed description of the EJ analysis is available in the TSD for this action, which can be found under Docket ID No. EPA-R03-OAR-2017-0615 and online at [www.regulations.gov](http://www.regulations.gov).

Vulnerable populations (characterized by the low-income criteria as discussed in the TSD) are found inside and outside the SO<sub>2</sub> nonattainment area boundary. In particular, the areas identified by the Sierra Club modeling outside the NAA in Westmoreland and Cambria counties are also identified as vulnerable populations. EPA recommends that Pennsylvania's response to our action, if finalized, should be as expeditious as practicable and take into account the emissions impact on the vulnerable populations both inside the current nonattainment area, and in adjacent areas. EPA is committed to environmental justice for all people and expects PADEP in its CAA obligations to ensure that public health protection of all people in the Commonwealth

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<sup>20</sup> On April 7, 2021, the Administrator directed all EPA offices to take immediate and affirmative steps to incorporate EJ considerations into their work, including assessing impacts to pollution-burdened, underserved, and Tribal communities in regulatory development processes and considering regulatory options to maximize benefits to these communities. Message from the EPA Administrator, Our Commitment to Environmental Justice (issued April 7, 2021) at <https://www.epa.gov/sites/production/files/2021-04/documents/regan-messageoncommitmenttoenvironmentaljustice-april072021.pdf>; "Executive Order on Advancing Racial Equity and Support for Underserved Communities Through the Federal Government" (EO 13985, issued January 20, 2021) at <https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/20/executive-order-advancing-racial-equity-and-support-for-underserved-communities-through-the-federal-government/> and 86 FR 7009 (January 25, 2021).

<sup>21</sup> See <https://www.epa.gov/environmentaljustice/learn-about-environmental-justice>.

is consistent with both EPA's and PADEP's commitments.

#### **IV. Proposed Action**

EPA is proposing to amend its prior full approval of the Indiana Area SO<sub>2</sub> attainment plan to a partial approval and partial disapproval. Specifically, EPA is proposing to retain approval of the emissions inventory and NNSR elements of Pennsylvania SIP revision and disapprove the attainment plan, RACM/RACT demonstration, RFP element, and contingency measures which were submitted on October 11, 2017, and February 5, 2020. EPA is soliciting public comments on the issues discussed in this document. These comments will be considered before taking final action.

#### **V. Incorporation by Reference**

In this document, EPA is proposing to include in a final EPA rule regulatory text that includes incorporation by reference. In accordance with requirements of 1 CFR 51.5, EPA is proposing to retain the following information as SIP strengthening measures. These measures were incorporated by reference into the SIP under the approval of this attainment plan (85 FR 66240, October 19, 2020). If this proposed disapproval is finalized, EPA does not intend to remove these measures, but to retain them. The measures are: the portions of the COAs or COs entered between Pennsylvania and Conemaugh, Homer City, Keystone, and Seward that are not redacted, as well as the unredacted portions of the TVOPs or Plan Approval included in the October 11, 2017 submittal and the corrected documents in the February 5, 2020 submittal. These include emission limits and associated compliance parameters (i.e. the measures which include system audits, record-keeping and reporting, and corrective actions). EPA has made, and will continue to make, these materials generally available through <https://www.regulations.gov> and at the EPA Region III Office (please contact the person identified in the **FOR FURTHER INFORMATION CONTACT** section of this preamble for more information).

#### **VI. Statutory and Executive Order Reviews**

*Executive Orders 12866 and 13563: Regulatory Planning and Review*



Under Executive Orders 12866 (58 FR 51735, October 4, 1993) and 13563 (76 FR 3821, January 21, 2011), this action is not a “significant regulatory action” and, therefore, is not subject to review by the Office of Management and Budget.

*Executive Order 13771: Reducing Regulations and Controlling Regulatory Costs*

This action is not an Executive Order 13771 regulatory action because this action is not significant under Executive Order 12866.

*Paperwork Reduction Act*

This rulemaking does not impose an information collection burden under the provisions of the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*).

*Regulatory Flexibility Act*

This action merely proposes to disapprove state requirements as not meeting Federal requirements and imposes no additional requirements beyond those imposed by state law.

Accordingly, the Administrator certifies that this rulemaking will not have a significant economic impact on a substantial number of small entities under the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*).

*Unfunded Mandates Reform Act*

Because this rulemaking proposes to disapprove pre-existing requirements under state law and does not impose any additional enforceable duty beyond that required by state law, it does not contain any unfunded mandate or significantly or uniquely affect small governments, as described in the Unfunded Mandates Reform Act of 1995 (Pub. L. 104–4).

*Executive Order 13132: Federalism*

This action also does not have federalism implications because it does not have substantial direct effects on the states, on the relationship between the National Government and the states, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132 (64 FR 43255, August 10, 1999). This action merely

proposes to disapprove a state requirement and does not alter the relationship or the distribution of power and responsibilities established in the CAA.

*Executive Order 13175: Consultation and Coordination with Indian Tribal Governments*

In addition, the SIP is not approved to apply on any Indian reservation land or in any other area where EPA or an Indian tribe has demonstrated that a tribe has jurisdiction. In those areas of Indian country, the rulemaking does not have tribal implications and will not impose substantial direct costs on tribal governments or preempt tribal law as specified by Executive Order 13175 (65 FR 67249, November 9, 2000).

*Executive Order 13045: Protection of Children From Environmental Health and Safety Risks*

This rulemaking also is not subject to Executive Order 13045 “Protection of Children from Environmental Health Risks and Safety Risks” (62 FR 19885, April 23, 1997), because it proposes to disapprove a state rule.

*Executive Order 13211: Actions That Significantly Affect Energy Supply, Distribution, or Use.*

Because it is not a “significant regulatory action” under Executive Order 12866 or a “significant energy action,” this action is also not subject to Executive Order 13211. (66 FR 28355, May 22, 2001).

*National Technology Transfer Advancement Act*

In reviewing state submissions, EPA’s role is to approve state choices, provided that they meet the criteria of the CAA. In this context, in the absence of a prior existing requirement for the state to use voluntary consensus standards (VCS), EPA has no authority to disapprove a state submission for failure to use VCS. It would thus be inconsistent with applicable law for EPA, when it reviews a state submission, to use VCS in place of a state submission that otherwise satisfies the provisions of the CAA. Thus, the requirements of section 12(d) of the National Technology Transfer and Advancement Act of 1995 (15 U.S.C. 272 note) do not apply.

*Executive Order 12898: Federal Actions to Address Environmental Justice in Minority*

*Populations and Low-Income Populations*

Executive Order 12898 (59 FR 7629 (February 16, 1994)) establishes Federal executive policy on environmental justice. Its main provision directs Federal agencies, to the greatest extent practicable and permitted by law, to make environmental justice part of their mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations and low-income populations in the United States. EPA lacks the discretionary authority to address environmental justice in this action. In reviewing SIP submissions, EPA's role is to approve or disapprove state choices, based on the criteria of the CAA.

Accordingly, this action proposing partial disapproval of Pennsylvania's SO<sub>2</sub> attainment plan for the Indiana Area, merely disapproves certain state requirements and retains certain state requirements as SIP strengthening measures in the SIP under section 110 of the CAA and will not in-and-of itself create any new requirements. Accordingly, it does not provide EPA with the discretionary authority to address, as appropriate, disproportionate human health or environmental effects, using practicable and legally permissible methods, under Executive Order 12898.

#### **List of Subjects in 40 CFR Part 52**

Environmental protection, Air pollution control, Incorporation by reference, Intergovernmental relations, Reporting and recordkeeping requirements, Sulfur oxides.

Dated: March 8, 2022.

**Diana Esher,**

*Acting Regional Administrator,*

*Region III.*